

Application No.: 09/846,896

Docket No.: 2006579-0127

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) In a system including an application having a plurality of components, at least one component having a property, each property being identified with an identifier, a method of associating an element of a user-interface to a current state of a property, the user-interface created independently of the application with which the user interface interacts, the method comprising:

(a) associating an element of a user-interface with a property path, the property path including a concatenation of a plurality of identifiers, the concatenation of identifiers defining a path through a plurality of application components to a property at the end of the concatenation;

(b) mapping the property path to a current state of the property at the end of the path defined by the concatenation of identifiers to associate the element of the user-interface with the current state of that property;

(c) detecting a change in one of a plurality of states in an application, each state in the plurality corresponding to one of the states mapped to an identifier in the concatenation of the property path;

(d) examining each identifier in the concatenation of the property path in succession, starting with an identifier corresponding to the changed one of the states of the plurality of states;

(e) determining for a currently examined identifier, a new next state of a property with a name identical to the currently examined identifier;

(f) re-mapping the currently examined identifier to the new next state in response to a change in a currently mapped state;

(g) repeating the steps of detecting a change in one of a plurality of states in an application and of examining each identifier in the concatenation of the property path in succession, for each subsequent identifier in the concatenation of identifiers; and

~~detecting a change in a state of a property mapped to one of said plurality of concatenated identifiers defining the property path, the change made on one of a local machine and a remote machine; and~~

(h) updating the element of the user-interface associated with the property path responsive to the detected change.

Application No.: 09/846,896

Docket No.: 2006579-0127

2. (Currently amended) The method of claim 1 wherein ~~the step of mapping the property path to the current state~~ (b) further comprises:

a)(b-1). examining each identifier in the concatenation of the property path in succession;

b)(b-2). determining, for the first identifier in the concatenation of the property path, a second state of a property with a name identical to the first identifier, a component of the application containing that property becoming a root application component;

c)(b-3). identifying, for the first identifier, a component of the application to which the second state points as a current application component;

d)(b-4). mapping the first identifier to the second state;

e)(b-5). determining for the next identifier in the concatenation of the property path, a next state of a property with a name identical to the next identifier located within the current application component;

f)(b-6). identifying, for the next identifier, a component of the application to which the next state points as a current application component;

g)(b-7). mapping the next identifier to the next state; and

h)(b-8). repeating steps e)(b-5) through (b-7), ~~f and g~~, until the last identifier of the concatenation is examined to map the property path to the current state of the property with a name identical to the last identifier.

3. (Currently amended) The method of claim 1 wherein ~~the step of mapping the property path to the current state~~ (b) further comprises mapping the property path to an undefined state if no property is found that corresponds to an identifier in the plurality of identifiers in the concatenation.

4. (Currently amended) The method of claim 1 wherein ~~the step of mapping~~ (b) further comprises generating a node tree having a plurality of nodes, wherein each node of the node tree represents a mapping of an identifier to one of, a state of a property and an undefined state.

5. (Original) The method of claim 4 wherein the node tree represents a plurality of property paths.

Application No.: 09/846,896

Docket No.: 2006579-0127

6. (Currently amended) The method of claim 1 further comprising the step of monitoring a plurality of states within the application to detect a change in one of the states of the plurality of states, each state in the plurality corresponding to one of the states mapped to an identifier in the concatenation of the property path.

7. (Original) The method of claim 6 wherein the step of monitoring further comprises receiving a property change event from a JAVABEAN-compatible component.

8. (Original) The method of claim 6 further comprising re-mapping the property path to a new current state in response to detecting the change in one of the states of the plurality of states.

9. (Original) The method of claim 6 further comprising re-mapping the identifier the concatenation of identifiers to the changed state in response to detecting the change in one of the states of the plurality of states.

10. (Currently amended) The method of claim 1 further comprising the step of generating a property change message in response to a change in a state of a property corresponding to one of the identifiers in the concatenation of the property path.

11. (Currently amended) The method of claim 1 further comprising the step of updating one or more user-interface elements associated with the property path with a new current state in response to a change in the current state of the property.

12. (Canceled)

13. (Currently amended) The method of claim ~~12-1~~ wherein ~~the step of repeating for each subsequent identifier step (g)~~ further comprises terminating the repeating in response to the new next state being identical to a state currently mapped for that currently examined identifier.

14. (Currently amended) The method of claim ~~12-1~~ further comprising the step of monitoring a new plurality of states within the application, the new plurality including the new next states mapped to an identifier in the concatenation of the property path.

Application No.: 09/846,896

Docket No.: 2006579-0127

15. (Original) The method of claim 1 wherein the property path is a first property path and the concatenation of identifiers includes a wildcard identifier and further comprising:

mapping a second property path to a first value; and

determining a second value for the wildcard identifier in response to the first value mapped to the second property path.

16. (Original) The method of claim 15 wherein the step of determining the second value further comprises determining the second value such that replacing the wildcard identifier of the first property path with the second value causes the current state mapped to the first property path with the replaced wildcard identifier to be equal to the value mapped to the second property path.

17. (Original) The method of claim 1 further comprising dynamically binding the property path to one of the application components including the property corresponding to the current state mapped to that property path.

18. (Original) The method of claim 1 further comprising transmitting to the application a request to update the current state of the property mapped to the property path associated with the element of the user-interface in response to a user modification of the value.

19. (Original) The method of claim 18 further comprising inhibiting a property change message in response to the application updating the current state of the property in response to the request to update.

20. (Original) The method of claim 1 wherein the user interface comprises an exemplary element associated with a property path including a wildcard identifier, the wildcard identifier corresponding to an indexed property including an index value range from a minimum value to a maximum value, further comprising:

Application No.: 09/846,896

Docket No.: 2006579-0127

generating an additional element for each index value of the indexed property from the minimum value to the maximum value by copying the given element associated with the property path; and

associating a new property path with each additional element.

21. (Original) The method of claim 20 further comprising replacing the wildcard identifier associated with the given element with the corresponding index value of the additional element to define the new property path.

22. (Original) The method of claim 1 further comprising registering interest in the property path.

23. (Original) The method of claim 1 wherein the step of mapping further comprises mapping one of the identifiers in the concatenation of the property path to a state of a property corresponding to the one of the identifiers.

24. (Currently amended) A system for associating an element of a user-interface to a current state of a property of an application, the application having a plurality of components, at least one component having a property, each property being identified with an identifier, the user-interface created independently of the application with which the user interface interacts. the system comprising:

a property connector module configured:

(1) to identify an association between an element of a user-interface and a property path, the property path including a concatenation of a plurality of identifiers defining a path through a plurality of application components to a property at the end of the concatenation;

(2) to map the property path to a current state of the property at the end of the path defined by the concatenation of identifiers, thereby associating the element of the user-interface with the current state of that property;

(3) to detect a change in one of a plurality of states in an application, each state in the plurality corresponding to one of the states mapped to an identifier in the concatenation of the property path.

Application No.: 09/846,896

Docket No.: 2006579-0127

(4) to examine each identifier in the concatenation of the property path in succession, starting with an identifier corresponding to the changed one of the states of the plurality of states;

(5) to determine for a currently examined identifier, a new next state of a property with a name identical to the currently examined identifier;

(6) to re-map the currently examined identifier to the new next state in response to a change in a currently mapped state;

(7) to repeat steps (3) through (6) for each subsequent identifier in the concatenation of identifiers, and

(3) to detect a change in a state of a property mapped to one of said identifiers in the concatenation of identifiers defining the property path, the change made on one of a local machine and a remote machine; and

([4]8) to update the element of the user-interface associated with the property path responsive to the detected change.

25. (Original) The system of claim 24 wherein the property connector module is further configured to:

a)(9-1). examine each identifier in the concatenation of the property path in succession;

b)(9-2). determine, for the first identifier in the concatenation of the property path, a second state of a property with a name identical to the first identifier, a component of the application containing that property becoming a root application component;

c)(9-3). identify, for the first identifier, a component of the application to which the second state points as a current application component;

d)(9-4). map the first identifier to the second state;

e)(9-5). determine, for the next identifier in the concatenation of the property path, a next state of a property with a name identical to the next identifier located within the current application component;

f)(9-6). identify, for the next identifier, a component of the application to which the next state points as a current application component;

g)(9-7). map the next identifier to the next state; and

h)(9-8). repeat steps e, f and g (9-5) through (9-7) until the last identifier of the concatenation is examined to map the property path to the current state of the property

Application No.: 09/846,896

Docket No.: 2006579-0127

with a name identical to the last identifier.

26. (Original) The system of claim 24 wherein the property connector module is further configured to map the property path to the current state further comprises mapping the property path to an undefined state if no property is found that corresponds to an identifier in the plurality of identifiers in the concatenation.

27. (Original) The system of claim 24 wherein the property connector module is further configured to generate a node tree having a plurality of nodes, wherein each node of the node tree represents a mapping of an identifier to one of, a state of a property and an undefined state.

28. (Original) The system of claim 27 wherein the node tree represents a plurality of property paths.

29. (Original) The system of claim 24 wherein the property connector module is further configured to monitor a plurality of states within the application to detect a change in one of the states of the plurality of states, each state in the plurality corresponding to one of the states mapped to an identifier in the concatenation of the property path.

30. (Original) The system of claim 29 wherein the property connector module is further configured to receive a property change event from a JAVABEAN-compatible component.

31. (Original) The system of claim 29 wherein the property connector module is further configured to re-map the property path to anew current state in response to detecting the change in one of the states of the plurality of states.

32. (Original) The system of claim 29 wherein the property connector module is further configured to re-map the identifier the concatenation of identifiers to the changed state in response to detecting the change in one of the states of the plurality of states.

33. (Original) The system of claim 24 wherein the property connector module is further configured to generate a property change message in response to a change in a state of a property

Application No.: 09/846,896

Docket No.: 2006579-0127

corresponding to one of the identifiers in the concatenation of the property path.

34. (Original) The system of claim 24 wherein the property connector module is further configured to update one or more user-interface elements associated with the property path with a new current state in response to a change in the current state of the property.

35. (Canceled)

36. (Currently amended) The system of claim ~~35~~24 wherein the property connector module is further configured to terminate the repeating in response to the new next state being identical to a state currently mapped for that currently examined identifier.

37. (Currently amended) The system of claim ~~35~~24 wherein the property connector module is further configured to monitor a new plurality of states within the application, the new plurality including the new next states mapped to an identifier in the concatenation of the property path.

38. (Original) The system of claim 24 wherein the property path is a first property path and the concatenation of identifiers includes a wildcard identifier and the property connector module is further configured to:

map a second property path to a first value; and

determine a second value for the wildcard identifier in response to the first value mapped to the second property path.

39. (Original) The system of claim 38 wherein the property connector module is further configured to determine the second value such that replacing the wildcard identifier of the first property path with the second value causes the current state mapped to the first property path with the replaced wildcard identifier to be equal to the value mapped to the second property path.

40. (Original) The system of claim 24 wherein the property connector module is further configured to dynamically bind the property path to one of the application components including the property corresponding to the current state mapped to that property path.

Application No.: 09/846,896

Docket No.: 2006579-0127

41. (Original) The system of claim 24 wherein the property connector module is further configured to transmit to the application a request to update the current state of the property mapped to the property path associated with the element of the user-interface in response to a user modification of the value.

42. (Original) The system of claim 41 wherein the property connector module is further configured to inhibit a property change message in response to the application updating the current state of the property in response to the request to update.

43. (Original) The system of claim 24 wherein the user interface comprises an exemplary element associated with a property path including a wildcard identifier, the wildcard identifier corresponding to an indexed property including an index value range from a minimum value to a maximum value, and the property connector module is further configured to:

generate an additional element for each index value of the indexed property from the minimum value to the maximum value by copying the given element associated with the property path; and

associate a new property path with each additional element.

44. (Original) The system of claim 43 wherein the property connector module is further configured to replace the wildcard identifier associated with the given element with the corresponding index value of the additional element to define the new property path.

45. (Original) The system of claim 24 wherein the property connector module is further configured to register interest in the property path.

46. (Original) The system of claim 24 wherein the property connector module is further configured to map one of the identifiers in the concatenation of the property path to a state of a property corresponding to the one of the identifiers.

47. (Original) The system of claim 24 further comprising:
a client node including:

Application No.: 09/846,896

Docket No.: 2006579-0127

the user interface having one or more elements; and a client portion of the property connector module.

48. (Original) The system of claim 24 further comprising: a server node including: the application; and a server portion of the property connector module.